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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,729	04/20/2001	Paul F. Struhsaker	WEST14-00015	1217

7590 04/08/2004

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EXAMINER

PHAN, HUY Q

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 04/08/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/839,729

Applicant(s)

STRUHSAKER ET AL.

Examiner

Huy Q Phan

Art Unit

2685

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2 and 5</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 4, 5 and 7 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The terms "first channel-related parameter" are not clearly disclosed in the specification.

Claims 5 and 6 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The terms "fading-related parameter" are not clearly disclosed in the specification.

Claims 8-12 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the

invention. The terms "first signal-related parameter" are not clearly disclosed in the specification.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, 4, 8-10, 12-14, 18 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kanterakis et al. (US-6,606,341).

Regarding claim 1, Kanterakis et al. disclose in figure 3, an apparatus for a communication station operable in a wireless communication system (fig. 1) to receive at least first burst data signals transmitted thereto upon at least a first channel by a first sending station (col. 2, lines 1-15), said apparatus comprising: at least a first demodulator (312, 314 and 315) selectably coupled to receive indications of bursts of the first burst data signal (311), said first demodulator for performing demodulation operations upon the indications received thereat (col. 4, lines 6-15); and a controller (319) coupled to said first demodulator, said controller for controlling performance of the first demodulator (col. 3, line 66-col. 4, line 5) to cause cyclo-stationary filtering of successive bursts of the first burst data signal during demodulation of the first burst data

signal by said first demodulator.

Regarding claim 2, Kanterakis et al. disclose in figure 3, the apparatus as recited in the rejection of claim 1, wherein the wireless communication system comprises a fixed wireless access system (fig. 1), wherein said communication station comprising a base transceiver station (31), and wherein said first demodulator (312) being embodied at the base transceiver station.

Regarding claim 4, Kanterakis et al. disclose the apparatus as recited in the rejection of claim 1 wherein the first channel upon which the first burst data transmitted signal being characterized by at least a first channel-related parameter (col. 12, lines 12-43) and wherein the cyclo-stationary filtering caused by said controller to be performed being performed upon the first channel-related parameter (col. 3, line 66-col. 4, line 5).

Regarding claim 8, Kanterakis et al. disclose an apparatus as recited in the rejection of claim 1, wherein the first burst data signal being characterized by at least a first signal-related parameter (fig. 12 and col. 12, lines 12-52) and wherein the cyclo-stationary filtering caused by said controller to be performed being performed upon the first signal-related parameter (col. 3, line 66-col. 4, line 5).

Regarding claim 9, Kanterakis et al. disclose an apparatus as recited in the

rejection of claim 8, wherein the first burst data signal exhibits FEC (forward error correction) (321) and wherein the first signal-related parameter (fig. 12 and col. 12, lines 12-52) upon which the cyclo-stationary filtering being caused to be performed by said controller comprising an FEC-related value (col. 10, lines 40-64).

Regarding claim 10, Kanterakis et al. disclose an apparatus as recited in the rejection of claim 8, wherein the first burst data signal exhibiting modulation orthogonalization (col. 9, lines 25-52) and wherein the first signal-related parameter (fig. 12 and col. 12, lines 12-52) upon which the cyclo-stationary filtering being caused by said controller to be performed comprising a modulation-orthogonalization value (col. 8, lines 45-66).

Regarding claim 12, Kanterakis et al. disclose an apparatus as recited in the rejection of claim 8, wherein the first burst data signal exhibiting time-adjustments (col. 11, line 60-col. 12, line 43) and wherein the first signal-related parameter upon which the cyclo-stationary filtering is caused by said controller to be performed comprises a time-adjustment parameter (col. 12, lines 12-43).

Regarding claim 13, Kanterakis et al. disclose in figure 3, for use in a fixed wireless network an apparatus comprising: a plurality of subscriber stations (35) (col. 3, lines 19-20); and a communication station (31) for transmitting and receiving signals to and from said subscriber stations wherein said communication station further

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comprising: at least one demodulator (312, 314 and 315) coupled to the communication station for demodulating a plurality of data signals from a plurality of subscriber stations and received by said communication station; and a controller (319) for processing incoming data signals and maintaining data signal profiles (318) wherein said controller being coupled to said demodulator for controlling said at least one (col. 3, line 66-col. 4, line 5).

Regarding claim 14, Kanterakis et al. disclose in figure 3, the apparatus as recited in the rejection of claim 13, wherein the wireless communication system comprising a fixed wireless access system (fig. 1), wherein said communication station comprising a base transceiver station (31).

Regarding claim 18, Kanterakis et al. disclose in figure 12, the apparatus as recited in the rejection of claim 13, wherein the data signals transmitted to the communication station by said plurality of subscriber stations being transmitted in bursts of selected time durations and wherein said controller further determines times of arrival and directions of the bursts which form the data signals (col. 11, line 60-col. 12, line 52).

Regarding claim 20, Kanterakis et al. disclose in figure 3, a method for acting upon at least first burst data signals transmitted to a communication operable in a wireless communication system (fig. 1), the first burst data signals transmitted to the communication station (31) upon a first channel by a first sending station (35), said

method comprising: selectably coupling at least a first demodulator (312, 314 and 315) to receive indications of burst of the first burst data signal (311); controlling performance (col. 3, line 66-col. 4, line 5) of the first demodulator to cause cyclo-stationary filtering of successive burst of the first burst data signal during demodulation of the indications of the first burst data signal (col. 4, lines 15-28).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 11, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Ganesan et al. (US-5,812,951).

Regarding claim 3, Kanterakis et al. disclose all the limitations of the apparatus as recited in the rejection of claim 2. But Kanterakis et al. fail to expressly show wherein first demodulator comprising the first demodulator and at least a second demodulator. However in the analogous art, Ganesan et al. teach in figure 9, wherein first demodulator comprising the first demodulator (160) and at least a second demodulator (162). Since, Kanterakis et al. and Ganesan et al. disclose an apparatus for wireless communication station; therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system by specifically having first demodulator comprising the first demodulator and at least a second demodulator as

taught by Ganesan et al. into the system of Kanterakis et al. for the purpose of providing wireless communication station being capable to communicate at least two mobile stations at the same time.

Regarding claim 11, Kanterakis et al. disclose all the limitations of the apparatus as recited in the rejection of claim 8, wherein the first signal-related parameter (fig. 12 and col. 12, lines 12-52) upon which the cyclo-stationary filtering being caused by said controller to be performed comprises antenna-combining parameters of the antenna assembly (col. 7, line 40). But Kanterakis et al. do not particularly recite wherein the communication station including an antenna assembly formed by a first antenna transducer and at least a second antenna transducer to provide antenna diversity. Ganesan et al. teach in figure 2, wherein the communication station including an antenna assembly formed by a first antenna transducer (29) and at least a second antenna transducer (30) to provide antenna diversity. Since, Kanterakis et al. and Ganesan et al. disclose an apparatus for wireless communication station; therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the system of Kanterakis et al. by specifically having the communication station including an antenna assembly formed by a first antenna transducer and at least a second antenna transducer to provide antenna diversity as taught by Ganesan et al. for the purpose of improving the quality and reliability of wireless communication station.

Regarding claim 15, Kanterakis et al. disclose all the limitations of the apparatus as recited in the rejection of claim 14. Kanterakis et al. do not explicitly disclose wherein the at least one demodulator comprising at least two demodulators, each demodulator embodied in a separate modem at the base transceiver station. However in analogous art, Ganesan et al. teach in figure 9, wherein the at least one demodulator comprising at least two demodulators (160 and 162).

Kanterakis et al. and Ganesan et al. fail to expressly recite each demodulator embodied in a separate modem at the base transceiver station. However, it is well known the art to place each demodulator in a separate modem at the base transceiver station in order to make easier for system installation and part replacement.

Regarding claim 19, Kanterakis et al. disclose in figure 3, the apparatus as recited in the rejection of claim 13. Kanterakis et al. do not particularly show wherein said controller further comprising a memory for storing and maintaining said data signal profiles and said channel profiles associated with each of the received said data signals. Ganesan et al. teach in figure 9, wherein controller (174) further comprising a memory (175) for storing and maintaining said data signal profiles and said channel profiles associated with each of the received said data signals (col. 15, lines 16-32), in order to separate profiles being created, stored and updated at the base station.

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. in view of Schuchman et al. (US-5,283,780).

Regarding claim 5, Kanterakis et al. disclose the apparatus as recited in the rejection of claim 4. But Kanterakis et al. fail to expressly show wherein the first channel-related parameter upon which the cyclo-stationary filtering being caused to be performed by said controller comprises a fading-related parameter. However in the analogous art, Schuchman et al. teach wherein the first channel-related parameter upon which the cyclo-stationary filtering (col. 9, lines 9-67) being caused to be performed by controller (33) comprises a fading-related parameter (col. 10, line 58-col 11, line 15). Since, both Kanterakis et al. and Schuchman et al. are related to wireless communication transceiver; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system by specifically having wherein the first channel-related parameter upon which the cyclo-stationary filtering being caused to be performed by said controller comprises a fading-related parameter as taught by Schuchman et al. into the system of Kanterakis et al. for the purpose of improving the quality and reliability of wireless communication transceiver.

Regarding claim 6, Kanterakis et al. and Schuchman et al. disclose the apparatus as recited in the rejection of claim 5. Schuchman et al. further disclose in figure 5, wherein the first demodulator (31) comprises a first equalizer (21) and wherein the fading-related parameter (col. 8, lines 41-67) upon which the cyclo-stationary filtering being caused to be performed by controller (33) comprises a first-equalizer weighting value (fig. 7 and col. 10, lines 1-38).

Regarding claim 7, Kanterakis et al. and Schuchman et al. disclose the apparatus as recited in the rejection of claim 6. Schuchman et al. further disclose in figure 5, wherein said controller further comprises a memory (col. 10, line 37) for storing and maintaining values of the first channel-related parameter.

7. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kanterakis et al. and Ganesan et al. as applied to claim 15 above, and further in view of Waters et al. (US-4,932,070).

Regarding claim 16, Kanterakis et al. and Ganesan et al. disclose all the limitations of the apparatus as recited in the rejection of claim 15. Kanterakis et al. and Ganesan et al. do not particularly teach wherein said base transceiver station being capable of operating two subscriber air interfaces on a burst-by-burst basis wherein each said burst comprising different data signal profiles and channel profiles. However in analogous art, Waters et al. teach in figure 3, wherein said base transceiver station (10) being capable of operating two subscriber air interfaces on a burst-by-burst basis wherein each said burst comprises different data signal profiles and channel profiles (col. 7, line 55-col. 8, line 42). Since, Kanterakis et al., Ganesan et al. and Waters et al. disclose an apparatus for wireless communication station; therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Kanterakis et al and Ganesan et al. by specifically having a base transceiver station being capable of operating two subscriber air interfaces on a burst-by-burst basis wherein each said burst comprises different data signal profiles and

channel profiles as taught by Waters et al. for the purpose of offering and enhancing wireless communication station of capability to communicate at least two mobile stations at the same time.

Regarding claim 17, Kanterakis et al., Ganesan et al. and Waters et al. disclose all the limitations of the apparatus as recited in the rejection of claim 16. Waters et al. further disclose wherein said first and second demodulator of said at least two demodulators alternately receive incoming data signals communicated by alternating ones of said subscriber stations (col.7, lines 36-41).

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Yamaura et al. (US-6,667,965) disclose communication method of transmission power control.
- b) Vannucci (US-5,459,727) discloses wireless communication system.
- c) Cole et al. (US-6,337,877) disclose method for scaling modem transfer capacity in communication system.
- d) Upton et al. (US-6,396,801) disclose waveform modem.
- e) Sakoda et al. (US-6,574,283) disclose transmission and reception apparatuses.
- f) Tsujimoto (US-5,479,417) discloses error correction apparatus.

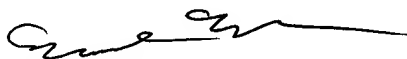
- g) Alapuranen et al. (US-6,269,093) disclose method and apparatus for suppressing transmitter burst mode disturbances.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huy Q Phan whose telephone number is 703-305-9007. The examiner can normally be reached on 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Urban F Edward can be reached on 703-305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Mar. 26, 2004


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